INFORMATION DISCESSURE STATEMENT BY APPLICANT

ATTORNEY'S DKT NO. 033072-026	APPLICATIO 09/993,84		
APPLICANT Robert H. Oakley, et al.			
FILING DATE November 5, 2001	GROUP 1645	AR	5° 3

						CEM	. X	· ·
			U.S. PATENT DOCU	JMENTS		Ei S	002	
	U.S. Patent D	ocument				R37		O
Examiner Initials	Number	Kind Code (if known)	Name of Patente of Cited D			Date of Public (MM-DD-YY	YY)	
1	6,110,693		Barak, et al.			08-29-20	00	
9	6,066,476		Tsien, et al.			05-23-20	00	
9	5,891,646		Barak, et al.			04-06-19	99	
0/	5,777,079		Tsien, et al.			07-07-19	98	
1	5,625,048		Tsien, et al.			04-29-19	97	
8	4,981,784		Evans, et al.			01-01-19	91	
1	4,816,567		Cabilly, et al.			03-28-19	89	
0	4,493,890		Morris			01-15-19	85	
1	4,491,632		Wands, et al.			01-01-19	85	
	4,472,500		Milstein, et al.			09-18-19	84	
2	4,466,917		Nussenzweig, et al			08-21-19	84	
1	4,451,570		Royston, et al.			05-29-19	84	
	4,444,887		Hoffmann			04-24-19	84	
		F(DREIGN PATENT DO	CUMENTS	_			
	Foreign Patent	Document						
Examiner Initials	Number	Kind Code (if known)	Country			ite of Publication MM-DD-YYYY)	Trans Yes	lation no
	W088/03168	A1	PCT		05-05-		 	
	WO01/58923	A2	PCT		08-16-	2001		
9	WO98/44350	A1	PCT		10-08-	1998	<u> </u>	
	W.000/12704	- A2	PCT		03-09-	2000		
2	W099/66324	A2	PCT		12-23-	1999		
9/	W094/16684	A1	PCT		08-04-	1994	<u> </u>	
2/	WO98/12310	A1	PCT		03-26-	1998		l
		NON F	ATENT LITERATUR	E DOCUME	NTS			
Examiner Initials								
2	ANGERS, S., et al., Detection of \$\beta_2\$-Adrenergic receptor dimerization in living cells using bioluminescence resonance energy transfer (BRET), Proceedings of the National Academy of Sciences, Vol 97, No. 7, March 28, 2000, pp. 3684-3689, Proc.Natl. Acad. Sci, USA.							
2	ATTRAMADAL, H., et al., β-Arrestin2, a Novel Member of the Arrestin/ β-Arrestin Gene Family, Journal of Biological Chemistry, Vol 257, No. 25, September 5, 1992, pp 17882-17890, The American Society for Biochemistry and Molecular Biology, Inc., USA.							
l	BARAK, et al., Abst Congress on Cell Bio Francisco, CA.	ract #2484, <u>M</u> blogy & 36 th Ai	olecular Biology of the Comerican Society for Cell B	ell, Vol 7, p. 43 liology Annual	27a Dece Meeting,	mber 1996, 6 th Interna December 7 - 11, 199	tional 6, San	
2	BARAK, L.S., et al., Constitutive arrestin-mediated desensitization of a human vasopressin receptor mutant associated with nephrogenic diabetes insipidus, Proceedings of the National Academy of Sciences, Vol 98, No. 1, January 2, 2001, pp. 93-98, Proc.Natl. Acad. Sci, USA.							
Examiner Signature	0			Date Considered	1/	-22-07		

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

MAR 1 3 2002

ATTORNEY'S DKT NO.	APPLICATION NO.
033072-026	09/993,844
APPLICANT	
Robert H. Oakley, et al.	
FILING DATE	GROUP
November 5, 2001	1645

							-7
			U.S. PATENT DOCUMENTS		X	M D	1
	U.S. Patent [Document				70	\bigcap
Examiner Initials	Number	Kind Code (if known)	Name of Patentee or Applican of Cited Document	t	Date of Public (MM-DO-YY	YÝľ.	1.1
	4,427,783		Newman, et al.		01-24-19	893	نگ
2	4,399,121		Albarella, et al.		08-1 6 -19	8,3	C
a	4,342,566		Theofilopoulous, et al.		08-03-19	82	
7	4,341,761		Ganfield, et al.		07-27-19	82	
~	4,016,043		Schuurs, et al.		04-05-19	77	
0	3,850,752		Schuurs, et al.		11-26-19	74	
4/	3,654,090		Schuurs, et al.		04-04-19	72	
	RE31,006	· · ·	Schuurs, et al.		08-03-19	82	
(4,816,397		Boss, et al.		03-28-19	89	
N/	6,150,393		Behan, et al.		11-21-20	00	
<i>//</i>	6,107,324		Behan, et al.		08-22-20	00	
10/	6,140,509		Behan, et al.		10-31-20	00	
	5,989,835		Dunlay, et al.		11-23-19	99	
		F	DREIGN PATENT DOCUMENTS				
	Foreign Patent	Document		Γ		_	
Examiner Initials	Number	Kind Code (if known)	Country	1	ate of Publication (MM-DD-YYYY)	Trans Yes	slatio
		NON P	ATENT LITERATURE DOCUME	NTS			
Examiner Initials			(in CAPITAL LETTERS), title of the artinal, serial, symposium, catalog, etc.), c publisher, city and/or country where	late, page	e(s), volume-issue numb		
	mediated β ₂ -Adrene 2790-2 7 95, The Ar	<i>rgic Receptor S</i> merican Society	erved Tyrosine Residue in G Protein-Coo equestration, <u>Journal of Biological Cher</u> for Biochemistry and Molecular Biology	nistry, Vo /, Inc., U	ol 269, No. 4, January 2 SA.	28, 199	
4	Activation, <u>Journal</u> Society for Biochem	of Biological Ch nistry and Molec	reen Fluorescent Protein Biosensor for L nemistry, Vol. 272, No. 44, October 31 cular Biology, Inc., USA.	, 1997, p	p. 27497-27500, The	America	
	BARAK, L.S., et al., Superfamily Regulat 15407-15414.	The Conserved tes Multiple Pro	d Seven-Transmembrane Sequence NP(perties of the β ₃ -Adrenergic Receptor, <u>E</u>	X) _{2,2} Y of Biochemis	the G-Protein-Coupled F try, Vol. 34, No. 47,19	lecepto 95, pp.) <i>(</i>
			king and Surlace Mobility of a Function ecular Pharmacology, 51, 1997, pp. 17		ct β ₂ -Adrenergic Recepto	or-Gree	n
xaminer ignature		1	Date Considered	11	-22-07		

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

ATTORNEY'S DKT NO.	APPLICATION NO.
033072-026	09/993,844
APPLICANT	
Robert H. Oakley, et al.	
FILING DATE	GROUP
Neuromber 5, 2001	1645 🚟

							<u> </u>	<u> </u>
			U.S. PATENT DOC	JMENTS		÷,	~	
Examiner	U.S. Patent C	ocument Kind Code	Name of Patent	ee or Applicant		Date of Public	or: atiòn	
Initials	Number	(if known)	of Cited D			(MM-ĐĐ-YY		
\mathcal{V}_{-}	5,958,713		Thastrup, et al.			09-28-19		· Lund
9	5,804,387		Cormack, et al.			09- 08 -19	98	
2	5,491,084		Chalfie, et al.			02-13-19	96	
2	5,532,157		Fink			07-02-19	96	
9/	5,482,835		King, et al.			01-09-19	96	
4	5,468,854		McCabe, et al.			11-21-19	95	
~	5,366,889		MacDonald, et al.			11-22-19	94	
2	5,284,746		Sledziewski, et al.			02-08-19	94	
	5,576,436		McCabe, et al.			11-19-19	96	
		FC	DREIGN PATENT DO	CUMENTS				
	Foreign Patent	Document						
Examiner Initials	Number	Kind Code (if known)	Country		_	ate of Publication (MM-DD-YYYY)	Tran: Yes	no
HIICIGIS	rediriber	(II KIIOWII)	Country			(1111)	1 - 3	<u> </u>
			· · ·				<u> </u>	1
								1
		NON P	ATENT LITERATUR	E DOCUME!	NTS			
Examiner Ini <u>ti</u> als			r (in CAPITAL LETTERS), rnal, serial, symposium, c publisher, city and/or c	atalog, etc.), d	ate, pag	e(s), volume-issue numb		
8	arrestin 2 during Hor	nologous Deser	alization of the Cellular R	edistribution of ce P Receptor,	f G Prote	ein-coupled Receptor Kir of Biological Chemistry	, Vol. 2	74.
2	No. 11, March 12, 1999, pp. 7565-7569, The American Society for Biochemistry and Molecular Biology, Inc., USA. CUBITT, A., et al., Understanding, Improving and Using Green Fluorescent Proteins, Trends in Biochemical Sciences, International Union of Biochemistry and Molecular Biology, 448-455,1995, Elsevier Trends Journals, Oxford, UK.							
2								
W			in-coupled receptor regula ol., Vol. 74, 1996, pp. 1				s and	
V	arrestins, Can. J. Physiol. Pharmacol., Vol. 74, 1996, pp. 1095-1110, NRC, Canada. FERGUSON, S.S.G., et al., Molecular Mechanisms of G Protein-Coupled Receptor Desensitization and Resensitization, Life Sciences, XP-002076355, Vol 62, pp.1561-1565, 1998, Elsevier Publication, USA.							
2		try, Vol 270, N	Phosphorylation in Agoni No. 42, October 20, 1995		4789, T	he American Society fo	r Bioch	
Examiner Signature			1	Date Considered	/	11-22-0	4	

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.

•	IEET	4	OF	_
				-5

INFORMATION DISCLOSUME STATEMENT BY APPLICANT

MAR 1 3 2002

ATTORNEY'S DKT NO.	APPLICA		lo.		
033072-026	09/993	£ 44		-	1
APPLICANT			Z	;	7
Robert H. Oakley, et al.		Ĺ	Ē		:
FILING DATE	GROUP	Ţ-,	70	ί,	7
November 5 2001	1645	()		1	Ì

						<u> </u>	
			U.S. PATENT DOC	UMENTS		787	
	U.S. Patent D	ocument				\mathcal{O}	
Examiner		Kind Code	Name of Patent	• •	1	ation	
Initials	Number	(if known)	of Cited D	Document		(MM-DD-YY	YY)
		FO	REIGN PATENT DO	CUMENTS			
	Foreign Patent	Document					
Examiner		Kind Code	^ .			ate of Publication	Translation
Initials	Number	(if known)	Country ATENT LITERATUR	E DOCUME		MM-DD-YYYY)	Yes no
	Include		(in CAPITAL LETTERS),			n annionriate), title of th	
Examiner			nal, serial, symposium, o			· · · · · · · · · · · · · · · · · · ·	
Initials			publisher, city and/or o	_			· · · · · · · · · · · · · · · · · · ·
2	FERGUSON, S.S.G., Science, Vol. 271,		B- <mark>arrestin in Mediating A</mark> 96, pp363-366.	gonist-Promote	d G Prot	ein-Coupled Receptor In	ternalization,
	GRADY, E., et al., A	Aechanisms Atte	enuating Cellular Respon	ses to Neurope	eptides: E	xtracellular Degradation	of Ligands
2	and Desensitization	of Receptors, T	he Journal of Investigate of Investigative Dermat	ive Dermatolog			
0/	HARRIS, E., et al, P.	rotein Purificatio	on Methods, pp.12-18,	1989, Oxford U	Iniversity	Press, New York, U.S.	
0	HAUSDORFF, W.P.,	et al., A Mutat	ion of the β_2 -Adrenergic	Receptor Impa	irs Agoni	st Activation of Adenyly	yl Cyclase
1			nist Binding, <u>Journal of</u> for Biochemistry and Mo				25, 1990, pp.
0	Î		lation of the Dopamine I				ntor Kinasas
4/	and β-arrestins, Jour	rnal of Biologica	l Chemistry, Vol 276 No	o. 40, October	5, 2001,	pp. 37409-97414, The	American
	Society for Biochem	istry and Molec	ular Biology, Inc., USA.				
V			tion of β-Arrestin with th				
			pated Pits, <u>Journal of Bio</u> ety for Biochemistry and				000, pp.
~ /			nergic Receptor/Barrestir				rina
	endocytosis, Procee	dings of the Nat	tional Academy of Scien	ces, Vol 96, N	o. 7, Mar	ch 30, 1999, pp. 3712	-3717,
	Proc.Natl. Acad. Sci						
~	LOHSE, M., et al., β 1550, June 22, 199		tein That Regulates β-Ad	drenergic Recep	otor Func	tion, <u>Science</u> , Vol. 248,	, pp. 1547-
	MCCONALOGUE, K.	., et al., <i>Activati</i>	ion and Internalization o	f the μ-opioid R	Receptor	by the Newly Discovere	d
	Endogenous Agonist Elseyier Science Ltd.		-1 and Endomorphin-2,	Neuroscience, \	Val. 90, I	No. 3, pp. 1051-1059,	1999,
1			and Subcellular Localiza				
(-			Regulation, Supplement stroenerological Associa			="	nd the 96 th
2			in-Coupled Receptors in				uronentide
							огорерное
~	receptors in enteric neurons, Receptor Regulation, pp. G792-G796, 1998, American Physiological Society. MCCONALOGUE, K., et al., Substance P-induced Trafficking of β-arrestins, Journal of Biological Chemistry, Vol. 274, No. 23, pp.16257-16268, June 4, 1999, The American Society for Biochemistry and Molecular Biology, Inc., USA.						
~	MÉNARD, L., et al.,	Members the G	Protein-Coupled Recept	or Kinase Fami	ly that Pi	hosphorylate the β,-Adre	energic
, 	Society:	ечиезтипоп, <u>Вк</u>	ochemistry, Vol. 35, No	. та, таав, рр.	. 4135-4	100, The American Che	micai
9/	MÉNARD, L., et al.,	Synergistic Reg	ulation of β ₂ -Adrenergic	Receptor Segu	estration	: Intracellular Compleme	ent of β,-
	MÉNARD, L., et al., Synergistic Regulation of β ₂ -Adrenergic Receptor Sequestration: Intracellular Complement of β ₂ -Adrenergic Receptor Kinase and β-Arrestin Determine Kinetics of Internalization, Molecular Pharmacology, Vol. 51, No. 5, May 1997, pp. 800-808, The American Society for Pharmacology and Experimental Therapeutics.						
	ס, May 1997, pp. 80	JU-808, The Am	nerican Society for Phari	macology and E		- · · · · · · · · · · · · · · · · · · ·	
Examiner	$\langle \rangle$	/ (Date	/	122-04	1
Signature				Considered		/ / /	·

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.

INFORMATION DISCLOSURE STATEMENT BY ABOUT

MAR 1 3 2002

ATTORNEY'S DKT NO. 033072-026	APPLICATION NO. 09/993,844				
APPLICANT Robert H. Oakley, et al.					
FILING DATE November 5, 2001	GROUP 1645 ≤				

						<u> </u>			
		U	.S. PATENT DOCUMENTS			<u> </u>) Q		
Cuaminos	U.S. Patent D	ocument Kind Code	Name of Patentee or Applican	Applicant Date o		Name of Patentee or Applicant Date o		:at ign	
Examiner Initials	Number	(if known)	of Cited Document		(MM-DD-YY	YYY	╌┤		
		FOF	REIGN PATENT DOCUMENTS						
	Faraign Ratage	Document		1					
	Foreign Patent	Kind Code		. D	ate of Publication	Trans	lation		
Examiner Initials	Number	(if known)	Country		(MM-DD-YYYY)	Yes	no		
HILLIGIO									
		-							
				 		1			
		<u> </u>		<u> </u>		<u> </u>			
	•	NON PA	TENT LITERATURE DOCUME	NTS					
Examiner Initials	Include item (book	, magazine, journa	n CAPITAL LETTERS), title of the art al, serial, symposium, catalog, etc.), o publisher, city and/or country where	date, pag	e(s), volume-issue num	the ber(s),			
7	Phosphorylation and	d Internalization F	itutively Active Alpha-1b Adrenergic leatures, <u>Molecular Pharmacology</u> , Vo ogy and Experimental Therapeutics.	Receptor II. 55, No	Mutants Display Differ	ent . 339-3	47,		
9	ORMÖ, M., et al., (1395, 1996, Amer	Crystal Structure of ican Association f	of the Aequorea victoria Green Fluore or the Advancement of Science, Was	shington,	D.C.				
2	OAKLEY, R.H., et a	l., Association of of Receptor Rese	β-Arrestin with G Protein-coupled Rensitization, Journal of Biological Chercity for Biochemistry and Molecular	<i>ceptors o</i> mistry, V	<i>luring Clathrin-mediated</i> ol 274, No. 45, Novem	d Endocy ber 5, 1	<i>tosis</i> 999,		
V	OAKLEY, R.H., et a	I., Differential Af	finities of Visual Arrestin, β-Arrestin ses of Receptors, <u>Journal of Biologics</u> ciety for Biochemistry and Molecular	, <mark>and</mark> β-A al Chemis	Arrestin2 for G Protein-o stry, Vol 275, No. 22, J	oupled une 2, 2	2000,		
2	OAKLEY, R.H., et a	I., Molecular Dete in Complexes afte	erminatnts Underlying the Formation or Receptor Endocytosis, Journal of B	of Stable iological	Intracellular G Protein- Chemistry, Vol 276, No	coupled 5. 22, Ju	ine 1,		
2	2001, pp. 19452 - 19460, The American Society for Biochemistry and Molecular Biology, Inc., USA. YOKOE, Spatial Dynamics of GFP-tagged proteins investigated by local fluorescence enhancement, Nature Biotechnology, Vol. 14, pp. 1252 - 1256, October 14, 1996.								
2	ZHANG, J., et al., Cellular Trafficking of G Protein-coupled Receptor/ β-Arrestin Endocytic Complexes, Journal of Biological Chemistry, Vol 274, No. 16, April 16, 1999, pp. 10999-11006, The American Society for Biochemistry and Molecular Biology, Inc., USA.								
2	ZAANG, J., et al., A Central Role for B-Arrestins and Clathrin-coated Vesicle-mediated Endocytosis in β ₂ -Adrenergic Receptor Resensitization, Journal of Biological Chemistry, Vol. 272, No. 43, October 24, 1997, pp. 27005-27014, The American Society for Biochemistry and Molecular Biology, Inc., USA.								
-									
							- · · · · · · · ·		
Examiner Signature		-	Date Considered		11-2200	7			

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.

<i>€</i>	APR 0 1 200
substitute for form 1449A/PTO & 1449B/PTO	la "
SECOND	13
INFORMATION DISC	LOŠÚŘĚ
STATEMENT BY AP	PLICANT
fuen as many shoots as access	ean/l

Sheet

Complete if Known		
Application Number	09/993,844	
Filing Date	November 5, 2001	
First Named Inventor	Robert H. Oakley, et al.	
Examiner Name	John D. Ulm	
Attorney Docket Number	033072-026	

NON-PATENT LITERATURE DOCUMENTS		
Examiner Initials	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
2	BORLE, A.B., An Overview of Techniques for the Measurement of Calcium Distribution, Calcium Fluxes, and Cytosolic Free Calcium in Mammalian Cells, Environmental Health Perspectives, March 1990, pp. 45-56, Vol. 84, U.S. Dept of Health and Human Services, U.S.A.	
2	BOSS, V., et al., Induction of NFAT-mediated Transcription by G _q -coupled Receptors in Lymphoid and Non-lymphoid Cells, The Journal of Biological Chemistry, May 3, 1996, pp. 10429-10432, Vol. 271, No. 18, The American Society for Biochemistry and Molecular Biology, Inc., USA.	
2	CHEN, W., et al., β-Arrestin 2 Mediates Endocytosis of Type III TGF- β Receptor and Down-Regulation of Its Signaling, Science, September 5, 2003, pp. 1394-1397, Vol. 301, American Association for the Advancement of Science, USA.	
2	EDGE, M.D., et al., <i>Total synthesis of a human leukocyte interferon gene</i> , NATURE, August 20, 1981, pp. 756-762, Vol. 292, No. 5825, American Chemical Society, Macmillian Journals, Ltd.	
9/	hNGLESE, J., et al., Isoprenylation in regulation of signal transduction by G-protein-coupled receptor kinases, Nature, September 10, 1992, pp. 147-150, Vol. 359, No. 6391, Macmillian Journals, Ltd.	
2	JAY, E., et al., Chemical Synthesis of a Biologically Active Gene for Human Immune Interferon-y, The Journal of Biological Chemistry, May 25, 1984, pp. 6311-6317, Vol. 259, No. 10, The American Society of Biological Chemists, Inc., USA.	
V	LYONS, S., et al., An immunological method for detecting gene expression in yeast colonies, Proceedings of the National Academy of Sciences USA, December 1984, pp. 7426-7430, Vol. 81.	
2	NAMBIAR, K.P., et al., <i>Total Synthesis and Cloning of a Gene Coding for the Ribonuclease S Protein</i> , Science, 1984, pp. 1299-1301, Vol. 223, Elsevier Science Inc., USA.	
V	NOREN, C.J., et al., A General Method for Site-Specific Incorporation of Unnatural Amino Acids into Proteins, Science, April 14, 1989, pp. 182-188. Vol. 244, American Association for the Advancement of Science, USA.	

Examiner	,	Date	
		Date	1 11 20 209
Signature		I Considered	1 //